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ABSTRACT

As one of a series of topic papers assessing federal laws and programs affecting persons with disabilities, this paper describes the major components of a comprehensive program to prevent disabilities, including programs to maximize health care, programs to maximize educational growth and sound psychological development, and programs for public education and awareness. Problems in achieving such a comprehensive prevention program include economic considerations and the need for coordination of efforts, for personnel to institute and conduct prevention programs, for legislation and governmental funding to support the programs, and for physical fitness programs to accommodate disabled persons to prevent further deterioration. A number of federal programs that contain prevention activities are described, such as maternal and child health programs, programs of the National Institutes of Health, and programs legislated under the Rehabilitation Act of 1973. A national plan to prevent disabilities is outlined with specific strategies in the areas of pregnancy, infant health, immunization, toxic agent control, occupational safety and health, smoking, nutrition, etc. The paper concludes with the recommendation that the Federal Government mount such a comprehensive national program. Twenty-three references are listed. (JDD)

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TOPIC PAPER D:

# PREVENTION OF DISABILITIES

National Council on the Handicapped

February, 1986

EC 211 761

ACKNOWLEDGMENT

This is one of a series of ten topic papers developed by the National Council on the Handicapped as part of its Special Report to the President and Congress: TOWARD INDEPENDENCE: An Assessment of Federal Laws and Programs Affecting Persons with Disabilities--With Legislative Recommendations. The members of the National Council on the Handicapped wish to expressly acknowledge with appreciation the special contribution made to this paper by Michael Marge.

TABLE OF CONTENTS


| | | Page |
|---|---|---|
| I. | INTRODUCTION: PREVENTION OF DISABILITIES, THE PROBLEM AND THE PROMISE | D-1 |
| II. | DEFINITIONS | D-5 |
| III. | PREVENTION PROGRAM COMPONENTS | D-8 |
| | A. Programs to Maximize Health Care | D-8 |
| | B. Programs to Maximize Educational Growth and Sound Psychological Development | D-11 |
| | C. Programs for Public Education and Awareness | D-13 |
| IV. | PROBLEMS | D-16 |
| | A. Need for Coordination of Prevention Efforts | D-16 |
| | B. The Need for Personnel to Institute and Conduct Programs of Prevention | D-17 |
| | C. The Need for Legislation and Governmental Funding to Support Prevention Program Components | D-17 |
| | D. The Need for Physical Fitness Programs to Accommodate Disabled Persons So That Further Deterioration Does Not Occur | D-18 |
| | E. Economic Considerations | D-18 |
| V. | LEGISLATIVE AND PROGRAM REVIEW | D-20 |
| | A. Maternal and Child Health and Crippled Children's Services | D-20 |
| | B. The Education of the Handicapped Act | D-20 |
| | C. Community Mental Health Block Grants | D-21 |
| | D. Rehabilitation Act of 1973 | D-21 |
| | E. National Institutes of Health (NIH) | D-22 |
| | F. Health Care Financing Administration | D-22 |
| | G. Other Related Program Efforts in Prevention | D-22 |
| VI. | GAPS IN LEGISLATION AND PROGRAMS | D-23 |
| | A. Pregnancy and Infant Health | D-24 |
| | B. Immunization | D-24 |
| | C. Toxic Agent Control | D-24 |
| | D. Occupational Safety and Health | D-25 |
| | E. Accidents and Injury Prevention | D-26 |
| | F. Smoking and Health | D-26 |
| | G. Misuse of Alcohol and Drugs | D-27 |
| | H. Nutrition | D-27 |
| | I. Physical Fitness and Exercise | D-28 |
| | J. Control of Stress and Violent Behavior | D-28 |

TABLE OF CONTENTS
(Continued)


| | Page |
|---|---|
| VII. OTHER CONSIDERATIONS . . . . . | D-30 |
| VIII. RECOMMENDATIONS . . . . . | D-32 |
| REFERENCES . . . . . | D-35 |

## I. INTRODUCTION: PREVENTION OF DISABILITIES, THE PROBLEM AND THE PROMISE

The National Council on the Handicapped has identified Prevention of Disabilities as a major priority for action by the Congress. Preventive action can greatly reduce the human suffering and costly and time-consuming interventions associated with disability. The estimated 35 million Americans with disabilities were victims of disease, accidents and/or lifestyle practices which affect health. A number of studies indicate that many of the causes of disability are preventable. Preventive action can greatly reduce the number of Americans who develop disabilities each year and the severity or multiplicity among persons with preexisting disabilities.

It is estimated that the United States spends more than $400 billion in health care, mostly for primary treatment of disease and injuries. Less than 5% of the Federal health dollar is allocated to disease and injury prevention and health promotion. Unfortunately, the absence of preventive action costs our nation billions in health care and many unnecessary deaths and disabilities at a time when there is a recognized and urgent need for cost containment of health care.

Although there has been progress in disease and accident prevention and health promotion, much more can and should be accomplished. Our nation has the knowledge, technology and resources needed to mount an effective and successful national disability prevention program. For example, infant mortality rates have realized a rapid decline. In 1965, the mortality rate was 25 deaths per 1,000 live births; in 1983, the rate was 10.9 infant deaths per 1,000 live births (National Center for Health Statistics, 1984). Even with the reported decline in infant mortality, 42,000 babies die before their first birthday and 250,000 are born with serious birth defects

or illnesses--many of the deaths and potential disabilities could easily be prevented. While adequate prenatal care can be provided for as little as $250 to $350 per patient, the average national cost of caring for a premature child is $20,000 to $40,000 per child during infancy; the cost of institutional care for a child born mentally retarded is estimated at $20,000 to $30,000 per year with a lifetime average cost of between $500,000 and $1 million.

Another tragic example of our nation's lack of focus on prevention is the needless number of deaths and disabilities resulting from auto accidents. In 1982, 35,512 persons were killed in motor vehicle accidents. However 2,490,000 persons were injured with more than 170,000 sustaining severe and disabling injuries to the head and brain (33%), spinal column (5.0%), chest (27.7%), abdomen (22.4%), and arm and legs (11.9%) (National Highway Traffic Safety Administration, 1984). Despite the improvement in the crashworthiness of motor vehicles, the reduction in speed limits, and the encouragement of seat belt usage, we are still realizing far too many deaths and disabilities from such accidents. If there were a 70% seat belt usage rate in the United States, it is estimated that 9,140 lives will be saved and 327,000 injuries reduced or prevented (U.S. Department of Transportation, 1984).

Other areas of prevention which need attention include disabilities due to heart disease and stroke; occupational accidents and hazards; home, recreational and pedestrian accidents; genetic disorders; infectious diseases; chronic diseases; toxic substances in the environment; noise pollution; radiation; and gunshot wounds. Finally, there is need to encourage Americans to use healthy lifestyle behaviors. These include nonsmoking

and restricted use of alcohol, increased exercise and weight control, improved diet and nutrition, control of stress, periodic medical examination and tests, and safety precautions. In 1984, Louis Harris and Associates conducted a survey on preventive behaviors of Americans. Thirty percent of American adults practice more than 75% of "good" lifestyle habits; 50% of adults practice 51-75% of the desirable habits; and finally, 10% practice 50% or fewer of the habits (Young, 1985, p. 8). As expected, the people most likely to engage in health-promoting behavior have incomes over $25,000, are college-educated and currently in good health and think they have a great deal of control over their future health. The challenge is to reach all Americans, with a special emphasis on encouraging young persons to practice these favorable behaviors.

The National Council on the Handicapped recommends that the Federal Government mount a national program for the Prevention of Disability by coordinating the prevention efforts of existing Federal programs, by providing additional resources for expanding prevention-related activities, by introducing new legislation to accelerate development of prevention-related activities at the State and local levels, and by providing national leadership to encourage the application of community-based, coordinated, systematic programs of prevention throughout the United States. A study of the feasibility of community-based models for prevention has concluded that the greater portion of the necessary resources needed for an effective prevention program is already available in most communities (Marge, 1981). The Federal Government, therefore, should focus on providing leadership and coordinating Federal programs. Limited additional funds should be provided

to support a modest expansion of current programs and to stimulate community-based prevention efforts.

II. DEFINITIONS

Disability prevention attempts to eliminate or reduce those factors which result in disability. This is contrasted to acute and long-term health care which intervenes after an individual develops a disorder. The progression from cause to disability is reflected in three levels in the definition of prevention, as follows.

Primary Prevention refers to the elimination or inhibition of factors that lead to the onset and development of a disorder. Primary prevention recognizes that individuals differ in their susceptibility to causes of disease or injury. In such cases, primary prevention attempts to reduce exposure of all "at risk" individuals to causes that result in disability. Examples of primary prevention strategies include immunizations, sanitation efforts, purification of water, public education about disease and injury prevention and health promotion, the use of auto safety belts, and recommended diet, exercise and weight control to prevent cardiovascular disease and stroke.

Secondary Prevention refers to the early detection and treatment of disorders in their beginning stages, especially before they create permanent disabilities. The major strategy of secondary prevention is screening persons with symptoms of a disorder and persons without symptoms but who are at risk in the population. Examples of secondary prevention strategies include hearing screenings at birth and throughout life, periodic vision screening, cancer screening programs for individuals over the age of 50, early childhood intervention programs for at risk infants and young children, and hypertension screening programs for at risk persons (smokers, drinkers, obese and sedate individuals, persons age 40 and over, persons with history of hypertension and persons under great stress).

Tertiary Prevention refers to the reduction of a disability by habilitative and rehabilitative methods to restore as much effective functioning as possible. At this stage in the progression of a disorder, the person is disabled and in need of specialized services. The person who is quadriplegic as a result of an auto accident or who is legally blind as a result of glaucoma will need special services in order to be effective socially and vocationally. Also, tertiary prevention helps reduce the development of more severe disability, including additional or related disorders. Examples of tertiary prevention include rehabilitation counseling for a worker with an amputated limb, mobility training for a newly blinded person, vocational training for a mobility-impaired person who works at a job that requires a great deal of physical activity, and speech therapy for a stroke victim with speech loss. Also, tertiary prevention involves training disabled persons so that they may prevent additional complications and disabilities, such as the chronic sores and urinary infections often experienced by persons with spinal cord injuries.

The epidemiologic concepts of incidence and prevalence are helpful in understanding the problems of prevention. Incidence refers to predictability or the rate at which people without a disease or disability will develop it during a specified period of time (such as a month or a year). Prevalence measures the number of people in a population with the disease or disability at a given point in time. For example, the incidence of infants at high risk for mental retardation is 3% of live births during a one-year period (Meyen, 1982). For 1983, this meant that 111,000 infants were added to the existing population of retarded persons. The prevalence of mental retardation in the United States is estimated at 1% of the population

(Meyen, 1982). Therefore, with a 1983 population of 232 million, about 2.32 million individuals are expected to be retarded. These data are used by planners to delineate parameters of the national problem and to determine targets to attain during the implementation of a national plan to prevent physical disabilities and mental retardation.

## III. PREVENTION PROGRAM COMPONENTS

This section reviews the major components of a comprehensive prevention program.

### A. Programs to Maximize Health Care

The rapid increase in health care costs have forced national health planners to seek alternative health care strategies. Many planners have attempted to refine the present system of health care delivery, while others have urged an expanded two-pronged attack: (a) provide accessible, high quality health care services to all Americans who need them and (b) institute effective programs of prevention to reduce the incidence and prevalence of disability in the population. By applying prevention strategies in a coordinated, systematic and effective manner, cost containment of health care and maximization of the current health care system will be realized. Specifically, a national prevention plan should attend to the following factors:

1. Improved Prenatal Medical Care. Prenatal care should be improved for the following reasons:

   a. to reduce risk of premature births,

   b. to reduce risk of low birth weight babies,

   c. to reduce risk of embryonic and fetal damage and injury related to smoking, alcohol and drug use, accidents, improper diets and nutrition, and prenatal metabolic disorders,

   d. to improve care for minority women, and

   e. to reduce the number of pregnancies among teenagers (15-19 years of age).

2. Improved Immunization Programs for Children. The revolution in medical research has resulted in the control of infectious diseases. For

example, smallpox has been eradicated from the world and the application of knowledge of immunology has led to the virtual elimination of diphtheria, tetanus, poliomyelitis (polio), measles, and rubella in the United States. Though immunization rates are high in the U.S., polio and rubella still occur at different times and in different population groups. If the United States is to maintain its good record in control of contagious disease, immunization rates must be kept high.

3. Mass Screening and Early Identification Programs. The process of early identification and appropriate follow-up assessment and treatment is essential to a preventive strategy. Since its purpose is to select individuals in the early stages of a disease or disorder, this strategy is often technically referred to as Secondary Prevention.

Early and accurate identification of potentially handicapping conditions is one of the most important prevention strategies. Unfortunately, it is underused and underrated. Mass screening for a range of disorders should be instituted on a systematic and periodic basis. It should focus primarily on infants and young children and high risk populations of adolescents, young adults and adults. Follow-up diagnosis and treatment must be provided for persons identified by screening tests as having health problems. Also, it is recommended that registries of high risk individuals be established, especially for children at risk in the 0 to 5 year group. After high risk infants are screened at birth, they should be screened one to three times between birth and age 5, and once again upon entering school.

Examples of mass screening programs are (a) hearing and vision screening of children and adults, (b) cancer screening for selected high risk groups (such as annual screening for rectal and colon cancer for persons

over 50), (c) hypertension screening of youth and adults, especially Blacks, and (d) diabetes screening for obese persons and those with a family history of the disease.

4. Improved Health Maintenance Programs. Health maintenance programs should be emphasized to help disabled persons prevent decubitus ulcers, urinary bladder infections and deterioration of mobility. Treatment for and training of the disabled person to prevent these complications will reduce impairments resulting from the disability and help restore function. Unfortunately, tertiary prevention services are neither well developed nor frequently applied. Tertiary prevention should be emphasized in any national program of disability prevention.

5. Improved Accessibility to Medical Care for All Persons. Although Medicaid was expected to improve accessibility to primary health care for low income individuals, it presently covers only about one third of all families living in poverty. A recent study indicates that 75% of the nation's low income population do not have access to medical care to the extent realized by the middle and upper income levels of the population (O'Connor, 1985, p. 32). This means that a large segment of the population does not receive the periodic screening and testing that is considered an important preventive strategy for the U.S. population. Inaccessibility to primary health care delays necessary treatment and training and results in advancing the progression of a disease, disorder or disability.

6. Improved Environmental Quality Control. There is tremendous public interest in conserving our natural and national resources and the quality of our environment. As a developed country, the U.S. has witnessed the accumulation of vast amounts of waste and unwanted waste products which

contaminate our air and water and may become detrimental to human health. Pollutants also limit desirable living space, interfere with sanitation and adversely affect the full enjoyment of the natural environment. Since these problems do not respect geographical or political subdivisions, States need Federal assistance to achieve and maintain a uniform program of environmental quality control. Past experience suggests that Federal Government standards have been tighter than those imposed by the States. There is a need, therefore, for continued Federal enforcement of current laws and for new and more effective measures to maintain a healthful environment.

In planning for the improvement and maintenance of environmental quality, the following priorities are recognized: (a) the protection of the community water supply for consumption, recreation, and other appropriate purposes; (b) the control of air pollution; (c) disposal of refuse and waste; (d) occupational health and safety; (e) the reduction of noise pollution; (f) food and milk control; (g) radiation protection; and (h) control of toxic substances in buildings (Kruse, 1976).

B. Programs to Maximize Educational Growth and Sound Psychological Development

Under this heading are prevention measures which assist the individual to realize educational potential and social and mental well-being.

Improved and expanded community-based early intervention programs are needed for high risk disabled infants, young children and their parents. The largest group of retarded persons (about 85%), mildly retarded individuals, appear to result from multiple causes that include biological and/or environmental factors (Birch & Gussow, 1970; Hurley, 1970). Much mild

retardation is now believed to result from the deprived sociocultural environment often associated with poverty, inadequate stimulation or improper nutrition. In children at risk for retardation because of sociocultural factors, considerable evidence supports the significance of early intervention and environmental modification to eliminate or ameliorate retarded development (Herber, 1978; Skeels, 1965, 1966; Crissey, 1977; Stedman, 1982; Meyen, 1982). Prevention program efforts result in marked changes in subsequent intelligence, educational, vocational, and social achievements of the children.

The Expanded Early and Periodic Screening Diagnosis and Treatment (EPSDT) program has been described as the finest Federal prevention-oriented initiative (O'Connor, p. 32, 1985). As a component of Medicaid, EPSDT requires States to pay for and ensure delivery of a wide range of preventive health care services to Medicaid-eligible children under the age of 21. Services through this program include comprehensive periodic screening and health assessments, remedial treatment, and assistance with transportation and scheduling. Despite recognition that this program is very helpful and needed, the States report that their EPSDT participation rate ranges from 15 to 30%. States should be encouraged to raise their participation rates so that all at-risk children are served.

Improved community-based services are needed to provide (a) child abuse prevention, (b) mental health counseling, (c) drug and alcohol counseling, and (d) geriatric services. The should include preretirement counseling, leisure time planning, depression prevention and preparation of high risk groups for possibility of chronic illness (such as cancer and stroke).

C. Programs for Public Education and Awareness

This prevention strategy refers to educating the community about prevention. The objectives of public education are to develop a prevention-oriented population which (1) has broad knowledge about prevention strategies and (2) is strongly motivated to move from the state of knowledge to action, behaving in ways which lead to and maintain good health.

Information about prevention should be disseminated as widely as possible at the local, State and national levels. The use of mass media (television, radio and the press) will play an important role if the campaign is systematic and continuous, if the exposure of the information to the public is appealing and receives priority status (that is, prime time on radio and television and front page coverage in newspapers), and if key public figures are associated with the campaign (Marge, 1981). In addition, it has been found that face-to-face instructional programs enhance the ability of the mass media program to promote positive health behavior in the general population (Maccoby, 1980). Intensive face-to-face instructional programs for certain segments of the community reinforce the concepts communicated by the media campaign. For example, a public media anti-smoking campaign will have a decided impact on light smokers. But if the campaign were associated with a community-based instructional program (for example, through the Red Cross or the American Lung Association) to teach smokers to reduce or eliminate their habit, the prevention effort also will have a decided impact on moderate and heavy smokers. In a study by the Stanford University Heart Disease Prevention Program, the combination of face-to-face meetings and a media campaign resulted in changed lifestyles and health behavior in a substantial number of individuals who were surveyed

by the study. About 50% of the smokers surveyed stopped smoking three years after the education program began (Maccoby, p. 208, 1980). Behaviors under the control of the individual could be influenced by the public education programs listed below.

1. Primary Disease Control Programs. Primary disease control programs inform and attempt to persuade the individual to make lifestyle changes, including eliminating smoking, restricting the use of alcohol, exercising strenuously three or more days per week, controlling weight (within recommended weight ranges) for height, build and sex, obtaining appropriate amounts of vitamins, minerals, and fiber, controlling stress, and having periodic examinations and tests.

2. Accident Prevention. Accident prevention requires the individual to follow safety precautions at home, at work, during leisure and recreational activities and during travel. Specifically, the precautions listed below should be emphasized.

(a) The use of auto child restraint seats and seat belts by occupants of autos.

(b) The use of helmets for motorcyclists and bicyclists.

(c) The observation of safety factors in the home to include fires, burns, poisonings, electrical shocks, drownings, and falls.

(d) The observation of pedestrian safety rules.

(e) The awareness of safety practices during recreation and sports activities: avoiding diving accidents, accidents during the use of trampolines and during the play of contact sports, especially football and soccer. Attention to performance standards of protective sports equipment and the need to improve the rules of play for contact sports to eliminate unnecessary exposure to risk of injury, are important. For example, "piling on" in football should be prohibited. It has been one of the main reasons for serious disabling injuries in a player whose body is crushed under the weight of five or more opponents.

(f) The application of occupational health and safety precautions following national and voluntary regulations to protect the worker from exposure to dangerous substances and work circumstances.

(g) The use of safety measures on playgrounds, especially for integrated play areas. For example, small smooth pea gravel or beach sand at least 10" thick should cover the entire region of the playground as a "cushion" against falls from heights of six feet or more.

3. Educational Programs in the Schools. Such programs should focus on health education and health promotion. Throughout the elementary and secondary school program, children should receive information and training in disease and injury prevention and health promotion (Marge, 1981). Curriculum units should include education for parenthood, preparation for the major transitions in life (adolescence, adulthood, older adulthood, leaving home, getting married, and death), and preparation for major life crises (death of a loved one, birth of a child, financial difficulties, loss of a job, sexual problems, and so on). To break the cycle of child abusive behaviors, the curriculum should stress appropriate child rearing practices and the prevention of child abuse. Such information should be introduced in a manner and sequence that is appropriate for the age and maturity of the student.

Christoplos and Valletutti view education as the "essential means of prevention" and call for a massive education program to teach individuals to behave in ways that minimize the likelihood of their becoming disabled (1979, p. 9).

IV. PROBLEMS

A. Need for Coordination of Prevention Efforts

Effective coordination of prevention efforts is needed among agencies at the Federal, State and local levels. With exceptions, prevention programs have been generally limited, redundant and unfocussed. As an example, the Surgeon General's effort to reduce smoking among Americans is countered by the large subsidies to the tobacco agricultural enterprise through the U.S. Department of Agriculture. In 1983, the Federal Government sustained $93 million in losses on loans to tobacco farmers and expects $450 million to $1 billion in further losses over the next three years (American Lung Association, 1985). In 1984, the tobacco industry spent an estimated $1.5 billion to promote smoking; the Federal budget for antismoking education is less than $10 million (Richmond, p. 3, 1985).

At the State level, efforts to reduce or eliminate teenage drinking and driving have been notably limited. Part of the problem rests with the aggressive sales pitch and advertising campaign of the alcoholic beverage industry. Despite State laws prohibiting drinking at 18 or 21, alcohol intake is still actively encouraged and readily available to teenagers.

At the local level, there is little coordination among local chapters of service organizations and agencies that fund efforts to reduce or eliminate smoking behavior. Local chapters of the American Cancer Society, the Red Cross, the American Lung Association and the American Medical Association all broadcast individual advertisements to discourage the public from smoking. Better coordinated and focussed efforts should result in a greater public knowledge and reduced smoking behavior.

Despite the laudable efforts of the Office of Disease Prevention and Health Promotion of the Department of Health and Human Services, the attainment of many objectives delineated in their National Plan (U.S. Department of Health and Human Services, 1980) has been delayed. Part of the problem is related to the fact that the Office of Disease Prevention and Health Promotion does not have a clear and direct mandate to effect coordination among Federal agencies and therefore must rely on goodwill and persuasion. More will be said about the role of the Office of Disease Prevention and Health Promotion later.

B. The Need for Personnel to Institute and Conduct Programs of Prevention

There is a growing interest in training health related professionals, educators and community-oriented workers in the area of prevention. There is a need for community leadership to plan and implement programs of disability prevention. Physicians, public health nurses, social workers, speechlanguage pathologists, audiologists, special educators, rehabilitation counselors, in the administrators health-related professions and public spirited citizens could provide such leadership after each has been trained in disease and injury prevention and health promotion. A new and emerging specialization is on the horizon--the community prevention specialist (Marge, 1984).

C. The Need for Legislation and Governmental Funding to Support Prevention Program Components

The Federal Government should play a role in encouraging States and local communities to institute comprehensive coordinated community-based programs which realize the highest usage of auto seat belts, child auto

restraint seats, smoke detectors in the home, early identification and early intervention for high risk infants and young children, the promotion of good health practices and the use of safety precautions as described earlier.

With regard to community-based prevention programs, five primary constituencies need to be recognized: the public, the medical/professional health community, business and industry, government at all levels, and foundations and many private voluntary organizations (Rodale, p. 40, 1985).

D. The Need for Physical Fitness Programs to Accommodate Disabled Persons So That Further Deterioration Does Not Occur

Tertiary prevention attempts to restore as much effective functioning as possible and to prevent further complications. There is need for a more coordinated and concerted effort to educate and train disabled persons in disease and injury prevention and health promotion and to better monitor their health status as a form of early identification.

E. Economic Considerations

The implementation of a national prevention program will require additional Federal dollars. At a time when Federal budget planners are seeking ways to reduce spending on domestic programs, it appears fruitless to recommend expanded program budgets for disease and injury prevention and health promotion and new monies for coordinated States and community prevention programs. But the "penny wise and pound foolish" adage holds true in the area of prevention. For example, while adequate prenatal care can be provided for as little as $250 to $350 per patient, the cost of care for

premature (and thus low birth weight) infants can be 100 times that amount (Petty, p. 37, 1985). Petty states, "Clearly, it is tragic and foolish for society to pay $20,000 to attempt to rescue a sick premature baby, and $1 million to care for a handicapped child, but refuse to pay $250 to prevent the conditions which led to those costs" (p. 37, 1985).

Another example of recommended budget and program expansion is the WIC program (Special Supplement Food Program for Women, Infants, and Children). This program was initiated in 1972 to provide nutritious foods, food education and referral to health care services to pregnant, post-partum and lactating women, and infants and children up to the age of 5, who are low income and at nutritional risk. Studies indicate that this program has reduced the incidence of low birth weight infants and infant mortality.

In addition to the need to expand programs and budgets to support broader access to good medical care, nutritional counseling and services and early identification and treatment, the Federal Government needs to provide leadership and modest support to encourage States and local communities to mount comprehensive and effective prevention programs.

## V. LEGISLATIVE AND PROGRAM REVIEW

A number of Federal programs that contain program components related to prevention activities are described below.

### A. Maternal and Child Health and Crippled Children's Services

Title V of the Social Security Act of 1935, as amended, authorizes grants-in-aid to the States, special project grants and research and training support to further the development and improvement of a national system of services to reduce infant mortality, enhance prenatal and post-partum care, and ameliorate the effects of handicapping conditions originating in childhood (U.S. Department of Education, 1980). In the area of primary prevention, this legislation supports prenatal care, nutrition programs, well-baby clinics (screening, early identification and intervention), disease and injury prevention, and immunization.

The legislation also supports public awareness programs and training programs for providers, and patients about good health practices. The Federal Fiscal Year, 1985 budget is $478 million.

### B. The Education of the Handicapped Act

This Act is the chief source of Federal support for aid to State and local educational agencies for educational and special services to handicapped children. The major part of the legislation is "a State grant-in-aid program which requires participating States to furnish all handicapped children with a free, appropriate public education in the least restrictive environment" (U.S. Department of Education, 1980).

With regard to prevention, the legislative program focus is primarily on secondary and tertiary prevention. The program encourages States to mandate special services to at risk and handicapped children from birth to five years of age. At present, 42 States mandate services to some portion of this age group. Nineteen States mandate services to all three to five year olds requiring attention. A few States provide support services to infants and young children. In order to prevent disabilities in at risk children and to intervene with children at the first discernible sign of a developing disability, the legislative program should be expanded to accelerate State concern, and responsibility for children from birth to five years of age.

In Fiscal Year 1985, 4,341,399 handicapped children were served under this program with a Federal budget of $1.135 billion.

C. Community Mental Health Block Grants

This legislation has provisions which refer to each of the three stages of prevention. Support is available for Child and Adolescent Service System Programs, Community Support Programs and Prevention Programs administered by the National Institute of Mental Health.

D. Rehabilitation Act of 1973

This legislation authorizes over a billion dollars in Federal support for training and placing mentally and physically handicapped persons into remunerative employment (U.S. Department of Education, 1980). Under this Act, a wide variety of service, demonstration, training and research grant programs are established, including a major Federal-State grant-in-aid

program. Programs focus on tertiary prevention, though some components may be interpreted as secondary prevention. In Fiscal Year 1985, the number of clients served is about 1 million at a budget of $1.1 billion.

E. National Institutes of Health (NIH)

Title IV of the Public Health Service Act authorizes a number of biomedical research activities which relate to the diagnosis, treatment, and prevention of various types of disabling conditions. All stages of prevention are considered by the NIH with the primary focus on medical approaches. For example, the Division of Prevention and Special Mental Health Programs of the National Institute of Mental Health (NIMH) supports intervention research aimed at the promotion and maintenance of mental health. Amongs its specific responsibilities, the NIMH is to design national goals and establish national priorities for the prevention of mental illness and the promotion of mental health.

F. Health Care Financing Administration

A major component of this program is the Early and Periodic Screening Diagnosis and Treatment (EPSDT) which was discussed at some length in a previous section.

G. Other Related Program Efforts in Prevention

Other prevention related legislation is administered by the Office of Human Development Services (HHS), Department of Agriculture, Consumer Product Safety Commission, Environmental Protection Agency, Department of Labor (Occupational Safety and Health Administration), Department of Transportation (National Highway Traffic Safety Administration), Department of Education and the Justice Department.

## VI. GAPS IN LEGISLATION AND PROGRAMS

This section reviews current deficiencies in Federal efforts to plan and implement a national prevention program. In the Fall of 1980, the Department of Health and Human Services issued a report entitled, "Promoting Health--Preventing Disease, Objectives for the Nation" (U.S. Department of Health and Human Services, 1980). The report delineates in considerable detail specific objectives and strategies for the nation to be attained by 1990. The objectives and strategies resulted from an intensive and complex process of deliberation by the Office of Disease Prevention and Health Promotion with all Federal agencies that administer prevention programs. Unfortunately, the National Plan has been implemented with only limited success. The primary reason is that the Office of Disease Prevention and Health Promotion and the Department of Health and Human Service did not have a clear and decisive mandate to effect the National Plan. Attempts by the Office of Disease Prevention and Health Promotion to meet objectives according to a timetable were based on persuasion and good will.

There is an immediate need for an organized and focussed Congressional and Administration effort to successfully coordinate existing Federal prevention program activities for the attainment of the Objectives for the Nation. Although the Objectives were written for implementation by the target date of 1990, because of the delay experienced by the Department of Health and Human Service, it is recommended that the Objectives be reviewed again with a new target date of the Year 2000.

The Objectives for the Nation are summarized as follows with some suggestions about immediate needs to be addressed.

A. Pregnancy and Infant Health

The Maternal and Child Health block grants have undergone funding cuts of 25-30%; the Women, Infants and Children (WIC) program serves only one-third of the eligible group and faces Federal budget cuts which will eliminate one million from the program. This objective focuses on low income women who do not have access to adequate health care during the time of pregnancy and for their infants and young children.

B. Immunization

Recent efforts by State and local educational agencies to require all school children to be immunized has been one of the most effective means for improving immunization levels. Though most school-age children are immunized, many preschool children are not. Also, high risk populations should be receiving annual immunizations against certain disabling diseases such as influenza and pneumococcal pneumonia. Federal efforts should be directed to 100% immunization of all preschool and school-age children and individuals who are considered at high risk (such as the debilitated child or an elderly person who is in need of protection against a dangerous strain of influenza).

C. Toxic Agent Control

Toxic agents include natural and synthetic chemicals, dusts (such as asbestos), minerals, certain materials and radiation which produce acute or chronic illness. Exposure to these agents may result in systemic poisoning, teratogenic abnormalities and growth impairments, cancer, neurologic disorders, behavioral abnormalities, immunologic damage, and chronic degenera-

tive diseases involving the major organs of the body. Legislative and regulatory measures which relate to this area of concern include the Clean Air Act, Clean Water Act and the Safe Drinking Water Act; Resource Conservation and Recovery Act; Toxic Substances Control Act; Federal Hazardous Substances Act, Consumer Product Safety Act; Federal Environmental Pesticide Control Act; the Food, Drug, and Cosmetic Act; Hazardous Substances Transportation Act; Atomic Energy Act; National Environmental Protection Act; Occupational Safety and Health Act; Federal Insecticide, Fungicide and Rodenticide Act; and Radiation and Safety Act. There is need for effective coordination of these legislative programs through a mechanism such as an Interagency Regulatory Liaison Group. Also, there is a need to coordinate public information about problems and developments related to toxic agents and to alert American citizens about current and potential hazards and how they may protect themselves.

D. Occupational Safety and Health

Worksite conditions may expose employees to health risks such as chemicals, asbestos, coal dust, heavy metals, cotton fiber, ionizing radiation, physical hazards, excessive noise and stress. These factors could result in disabilities related to cancers, lung disease, heart disease, birth defects, sensory defects, injuries and psychological problems. It is necessary to protect the worker by educating him or her about potential hazards, by instituting strict regulatory efforts to promote safety and health (using both governmental and voluntary regulations) and by continuing an active program of research on these problems. The Occupational Safety and Health Administration and the Mine Safety and Health

Administration are responsible for establishing and enforcing standards to protect the worker, but the enabling legislation administered by these agencies hold employers responsible for creating a safe and healthy work environment. Despite the attempts to regulate the work environment, the Federal Government--business and industry partnership needs to be improved. For example, the National Safety Council reports that in 1983, 1.9 million workers experienced injuries. Of this number, 70,000 were permanently impaired (National Safety Council, p. 26, 1984). During the past decade, an estimated 750,000 workers were permanently injured. This area of prevention can greatly reduce the incidence of adult disabling conditions.

E. Accidents and Injury Prevention

In 1981, an estimated 59 million people incurred nonoccupational injuries. Of this number, 27 million occurred in and around the home. The lost productivity cost the nation an estimated $55 billion. The major causes of accidents are associated with accidents involving motor vehicles, falls, drownings, burns, poisoning and gunshot wounds. Federal efforts in this area of disability prevention have been piecemeal. There is a great need for public information and education, legislative, regulatory and economic measures to reduce or eliminate the risk of injury resulting from accidents.

F. Smoking and Health

The Public Health Service has identified smoking as the single most important preventable cause of death and disease. In addition to damaging the health of heart and lungs, smoking is a major contributor to death and

injury from fires, burns and other accidents. Twenty-nine percent of fatal house fires and a substantial number of burn injuries are smoking-related. Of particular concern is the inconsistency in Federal program goals for this major national health hazard. The Department of Health and Human Services urges Americans to refrain from smoking but the Department of Agriculture supports tobacco production.

G. Misuse of Alcohol and Drugs

The major purpose of this significant area of prevention is to reduce the adverse effects of alcohol and dangerous substances on adolescents, young adults, pregnant women, and the elderly. An estimated 10% of the adult population 18 years and over are frequent heavy drinkers. Approximately 2.5 million persons have serious drug problems. The public and private sectors have had a limited impact on these problems through efforts for public education and alcohol beverage and drug regulation. There is a great need for community-based efforts to reduce the consumption of alcohol and drugs.

H. Nutrition

This prevention issue relates to the excessive or inappropriate consumption of nutrients. Inadequate nutrition is associated with pregnancies which produce low birth weight infants with retarded mental and physical development. Public education, nutrition training and counseling, and accessibility to adequate health care, especially by persons with low incomes, are necessary if this problem area is to improve. The Federal Government must increase its efforts to eliminate the problems created by nutritional inadequacies.

## I. Physical Fitness and Exercise

As a primary prevention measure, regular and reasonable exercise reduces the risk of cardiovascular disease, obesity, diabetes, musculoskeletal problems, respiratory diseases, stress and depression. Certain groups are reported to have lower rates of participation in appropriate physical activities. These include girls and women, older people, physically and mentally handicapped people of all ages, inner city and rural residents, people of low socioeconomic status and residents of institutions. Governments at all levels should encourage physical fitness and exercise through a coordinated program of public information and education. Fitness-related activities should be allowed under federally funded programs.

## J. Control of Stress and Violent Behavior

Stress management programs are of high priority because the socioeconomic impact of contemporary psychosocial stress and its biologic devastation is considered to be potentially enormous. It can lead to such phenomena as fatigue, headache, obesity, absenteeism, coronary disease, suicide, accident-proneness and violence. Research has demonstrated various associations between stress and health and disease. It appears that teenagers, the elderly and persons with low incomes are especially vulnerable to stress. The general public has limited information about what can be done to reduce stress. There is need to step up research on stress and its control and to inform and educate the public about current knowledge of stress management.

Suicide and homocide are associated with stress. Federal programs can play a significant role in reducing the incidence of these two behaviors by assisting programs which teach individuals to cope and manage stress, by

supporting programs for alcohol and drug misuse, by providing leadership in national gun control legislation (especially handguns), by publicizing the early signs of potential suicide and steps to take to prevent a person's suicide, and by supporting further research in stress and violent behavior control.

VII. OTHER CONSIDERATIONS

As was stated earlier, there is a need for systematic, standardized and community-based programs to screen infants and young children and other selected age groups of the population to determine if health problems may develop or have developed. If problems are found, the appropriate intervention program should be applied immediately to reduce the probability that a chronic disability will develop. This is especially important for infants and children who are at risk for physical and mental disabilities. Such interventions are cost effective when infant and child behaviors indicate early signs of disability. Federal programs have supported early identification and intervention (Secondary Prevention) for high risk infants and children. Program support should be expanded until all children can benefit from such program efforts. There is a need for leadership at the Federal level to encourage State and local governments to mandate such services to potentially handicapped children from birth to five years of age.

Another area of concern is support for mental health programs. Reduced Federal spending has resulted in reductions in necessary services for children and adults with mental disabilities. For example, there is a shortage of trained mental health personnel to provide services for children.

Another area of concern relates to individuals who are already disabled. It is often assumed that once a program of therapy and special services is administered to a disabled person, the process of intervention is terminated. This static perception of health care for disabled persons ignores the fact that disabilities may become worse or the individual may develop other physical and mental problems which further complicate efforts

at rehabilitation. There is a need to monitor and follow-up on all cases of disability and to intervene as necessary to prevent further deterioration. Federal programs related to disabled children and adults should include provisions for follow-up and monitoring.

VIII. RECOMMENDATIONS

The recommendations which follow are predicted on a number of assumptions related to prevention programs. First, it is assumed that the National Council on the Handicapped should play an important role in the development of a National Plan for the Prevention of Disabilities. Second, although the national plan of the Department of Health and Human Services, "Objectives for the Nation," focuses on fatality rather than disability, the plan does provide a good foundation for the development of the National Plan for the Prevention of Disabilities. Third, the Office of Disease Prevention and Health Promotion, Department of Health and Human Services, which coordinated the development of the 1990 Objectives for the Nation, possesses the expertise, resources and experience needed to assist the National Council in the development of a National Plan for the Prevention of Disabilities and to assume the major responsibility for implementing the Plan. Fourth, the major emphasis of the Prevention of Disabilities Plan will be the coordination of Federal prevention-related programs and activities. Governments and organizations at the State and local levels will be encouraged to establish coordinated, comprehensive programs for the prevention of disability. Fifth, the "partnership" between the National Council on the Handicapped and the Office of Disease Prevention and Health Promotion will work only if the partnership is given a clear mandate by the Congress. The mandate should be to develop and implement a national plan. If these responsibilities are not mandated by Congress, "turfism" and historical barriers will continue to prevent effective cooperation. The Federal plan should stress coordination of existing resources and programs, public education and persuasion, the expansion of some Federal programs, the addition

of several new Federal programs related to prevention, and disability prevention research. Sixth, it is assumed that most of the necessary resources are already available at the Federal, State and local levels. Seventh, Americans must personally accept more responsibility for disability prevention than they have in the past by making lifestyle changes and applying safeguards against disease and injury. And eighth, it is assumed that a community-based model of prevention (or a grass roots approach) is more effective than a centralized governmental model based on governmental control. Therefore, the Federal Government should provide leadership in disability prevention by coordinating its own programs and consolidating its resources, by encouraging States and local communities to plan and implement prevention programs at their levels, and by monitoring the regulations and program efforts related to prevention.

1. Congress should enact a law related to prevention entitled "The Prevention of Disabilities Act."

The Act should have three chief provisions: a) authorize the National Council on the Handicapped to establish policy and goals for a National Plan on the Prevention of Disabilities, and to review and make recommendations regarding implementation of the Plan; b) require the Office of Disease Prevention and Health Promotion (Department of Health and Human Services), working with the National Council on the Handicapped and other appropriate Federal agencies, to oversee the development and implementation of the National Plan; and c) authorize a small grant program to support the development of coordinated, comprehensive, and effective prevention programs by States and local communities. The grant program should be administered by the Assistant Secretary of Health. Implementation of this recommendation

should require only a small number of additional staff and some operational funding to support the implementation of Parts a and b above. In addition, the small grant program (Part c) would require only minimal funding support over a five year period.

2. Congress should provide appropriate levels of funding for special program priorities related to disability prevention.

The appropriation of funds for specific program priorities should include: a) prenatal care through the Maternal and Child Health Care program, Medicaid, and the Women, Infants, and Children (WIC) program (at no less than Fiscal Year 84 levels); b) preschool educational services through block grants to State educational agencies; c) educational programs for professional personnel, parents and children in disability prevention; d) dissemination of information about disability prevention to minority groups, chidren and adolescents through public education programs and curriculum units about prevention in elementary and secondary schools; and e) development of methods for preventing secondary disability among those already disabled.

3. Congress should direct its Office of Technology Assessment to conduct a study of the status of primary and secondary prevention of disability in the United States, and to submit a report of its findings two years after the issuance of the National Plan on the Prevention of Disabilities.

The authorization would provide for an objective, independent assessment through the Office of Technology Assessment of the status of primary and secondary prevention efforts in the United States, and of compliance with the National Plan.

## REFERENCES


Birch, H.G. & Gussow, J.D. (1970). Disadvantaged Children, Health, Nutrition, and School Failure. New York: Harcourt, Brace & World.

Crissey, M.S. (1977). Prevention in retrospect: adoption follow-up. In G.W. Albee & J.M. Joffe (eds.), Primary Prevention of Psychopathology, Volume I: The Issues. Hanover, N.H.: University Press of New England.

Herber, F.R. (1978). Sociocultural mental retardation: a longitudinal study. In D.G. Forgays (ed.), Primary Prevention of Psychopathology, Volume II: Environmental Influences. Hanover, N.H.: University Press of New England.

Hurley, R. (1970). Poverty and Mental Retardation: A Causal Relationship. New York: Random House.

Kruse, C.W. (1976). Selected environmental health problems in the United States. In W.A. Reinke and D.N. Williams (ed.), Health Planning, Qualitative Aspects and Quantitative Techniques. Baltimore, MD: Waveryly Press.

Maccoby, N. (1980). Promoting positive health behaviors. In L.A. Bond and J.C. Rosen (eds.), Competence and Coping During Adulthood. Hanover, N.H.: University Press of New England.

Marge, M. (1981). The prevention of human disabilities: policies and practices for the 80s. In L.G. Perlman (ed.), International Aspects of Rehabilitation: Policy Guidance for the 1980s. Alexandria, VA: National Rehabilitation Assoc.

Marge, M. (1981). The prevention of communication disorders. Asha, 3, 29-33.

Meyen, E.L. (1982). Exceptional Children and Youth, An Introduction. Denver: Love Publishing Company.

National Center for Health Statistics. (1983). Health-United States and Prevention Profile. (DHHS Publication No. (PHS) 84-1232). Washington, D.C.: U.S. Government Printing Office.

National Highway Traffic Safety Administration. (1984). Get It On--Public Apathy--Highway Killer. Washington, D.C.: Public Affairs Division of the Department of Transportation.

National Safety Council. (1984). Accidents Fact. Chicago, IL: National Safety Council.

O'Connor, M.A. (1985). Prevention strategies for the poor. Health & Medicine, 3, 32-33.

Petty, R. (1985). Preventing infant mortality and morbidity. Health & Medicine, 3, 34-37.

Richmond, J.B. (1985). Coming of age in health promotion and disease prevention. Health & Medicine, 3, 3-5.

Skeels, H.M. (1965). Effect of adoption of children from institutions. Children, 12, 33-34.

Skeels, H.M. (1966). Adult status of chlidren with contrasting early life experiences. Monographs of the Society for Research on Child Development, 31, 1-65.

Skeels, H.M. (1966). Headstart on headstart: 30 year evaluation. 5th Annual Distinguished Lectures in Special Education: Summer Session, 1966. Los Angeles, CA: University of Southern California School of Education.

Stedman, D.J. (1982). Effects of educational intervention programs on the cognitive development in young children. In M. Lewis & L.T. Taft, Development Disabilities, Theory, Assessment and Intervention. New York: SP Medical and Scientific Books.

U.S. Department of Education. (1980). Summary of Existing Legislation Relating to the Handicapped. (DOE Publication No. E-80-22014.) Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. (1980). Promoting Health, Preventing Disease: Objectives for the Nation.

Valletutti, P.J. & Christoplos, F. (Eds.). (1979). Preventing Physical and Mental Disabilities, Multidisciplinary Approach. Baltimore, MD: University Park Press.

Young, R. (1985). Prevention in America II. Health & Medicine, 3, 6-17.